

Mountaineer Skies

Volume 12, Issue 3

<http://planetarium.wvu.edu/>

July – September, 2012

Calendar

On **July 5**, the Earth will be at **aphelion**. This is when the Earth is farthest from the Sun at 1.017 AU. Six months later on January 2, 2013, it will be at **perihelion** when it will be closest to the Sun at 0.983 AU. (One Astronomical Unit (A.U.) = 149,598,000 km)

Launched on **November 26, 2011**, the **Mars Science Laboratory**, a rover, is scheduled to land on Mars in early **August, 2012**. Its prime mission is to see if Mars has ever been able to support microbial life.

On the night of **August 12/13** the **Perseids Meteor Shower** will peak. Coming from the constellation **Perseus, the Hero**, you can expect maybe 40 to 50 incidences per hour. The best time to view the shower is after midnight. This is probably the year's best.

The **Autumnal Equinox** will occur on **September 22** this year. This is one of the two days in the year when the Sun rises due East and sets due West, and is also when the periods of night and day are of equal length. This is where the word equinox comes from. Literally it means time of equal night and day. The other day during the year when this occurs is the **Vernal (Spring) Equinox**, the first day of Spring.

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In The Sky This Quarter

Visible Planets in the Night Sky

Beginning of July, 2012

	Const	Rise	Transit	Set	Mag
Sun		05:57	13:24	20:51	-26.8
Mercury	Cnc	08:05	15:13	22:21	0.6
Venus	Tau	04:01	11:03	18:09	-4.5
Mars	Vir	12:31	18:36	00:40	0.9
Jupiter	Tau	03:33	10:47	18:03	-2.1
Saturn	Vir	14:26	20:06	01:47	0.7

Beginning of August, 2012

	Const	Rise	Transit	Set	Mag
Sun		06:20	13:26	20:32	-26.8
Mercury	Cnc	05:57	12:56	19:48	3.9
Venus	Tau	03:05	10:15	17:26	-4.4
Mars	Vir	11:55	17:37	23:17	1.1
Jupiter	Tau	01:52	09:10	16:31	-2.2
Saturn	Vir	12:30	18:08	23:47	0.8

Beginning of September, 2012

	Const	Rise	Transit	Set	Mag
Sun		06:49	13:20	19:50	-26.8
Mercury	Leo	06:08	12:50	19:36	-1.4
Venus	Gem	03:10	10:20	17:31	-4.2
Mars	Vir	11:32	16:48	22:03	1.2
Jupiter	Tau	00:06	07:26	14:49	-2.4
Saturn	Vir	10:36	16:15	21:51	0.8

Cnc	Cancer, The Crab
Tau	Taurus, The Bull
Vir	Virgo, The Maid
Leo	Leo, The Lion
Gem	Gemini, The Twins

About: **Mars Science Laboratory Invades Mars**

“Yet across the gulf of space, minds that are to our minds as ours are to those of the beasts that perish, intellects vast and cool and unsympathetic, regarded this earth with envious eyes, and slowly and surely drew their plans against us.” Thus H. G. Wells began his famous science fiction story, "War of the Worlds", published in 1898. As it has turned out, however, it was not ultimately the Martians who invaded Earth, but the Earth who invaded Mars. We are looking for, among other things, life or at least evidence of life. Pursuant to that objective, we (the Earth) have flown over forty missions, both flybys and landers, to the red planet. Many, but not all, were very successful.

Our newest probe to the fourth planet lifted off from Launch Complex 41 at Cape Canaveral, Florida, precisely at 10:02 A.M. on November 26, 2011, atop an Atlas V-541 rocket carrying a sedan sized rover called **Mars Science Laboratory** (aka **Curiosity**) with a projected rendezvous and landing on the night of August 5, 2012. It will put down in the **Gale Crater**.

If you would like to see the **Gale Crater** where Curiosity will land, download **Google Earth** (free) at <http://www.google.com/earth/index.html>. Load and run the program. Once you have the **Google Earth** up and running (you will see a video of the rotating Earth), go to the menu bar and select **View**, then **Explore**, then finally **Mars**. You will then be taken to the red planet. Once there, enter "**Gale Crater**", without the quotes, in the **Search box** and click **Search**. You will be taken there.

There are four major, or primary, objectives for **Curiosity**.

1. **To find out if Mars has now or ever has had life**
2. **To observe close-up the climate of the red planet**
3. **To investigate Martian geology**
4. **With the data collected, to plan a manned mission to the rusty planet**

Seven Minutes of Terror for NASA

Once the **Mars Science Laboratory** has closed with Mars, its complex, multistage, landing procedure will commence. (The following graphics are from **NASA**.)



Here we see the space craft as it is beginning to enter the Martian atmosphere where friction is beginning to slow the space craft down in anticipation for landing.



Just as the space ships **Viking, Pathfinder, and Mars Explorer** before it, the **Mars Science Laboratory** will deploy a large parachute to further reduce its speed.



Once the parachute has been jettisoned, the space craft fires its engines to continue to reduce its velocity and prepare for the sky crane.



Finally, the sky crane lowers the rover into the **Gale Crater** and moves off for a crash landing. Rover will then begin its primary job of looking for life.

Mars, as well as Saturn, will be in the constellation Virgo, the Maid, in August. Here is how you can find it on various dates. It is just below Saturn which is only slightly brighter than the red planet.

On August 1, sunset will be at 8:33 P.M. and Mars will be in the SW about 1/3 up from the horizon with a heading of WSW.

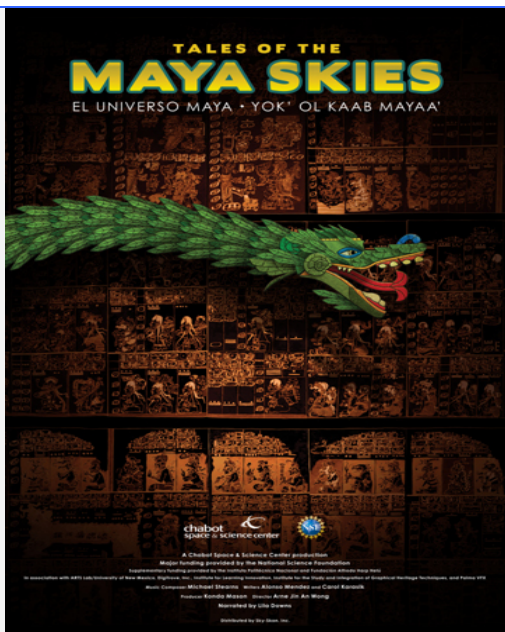
Five days later on August 6, sunset will commence at 8:28 P.M. with Mars in the SW not quite as high as on the 1st heading WSW.

Finally, on August 13, sunset will be at 8:19 P.M. Mars will be in the SW not quite as high as on the 1st at a heading of WSW.

This truly could be an historic mission as Curiosity is specifically designed to look for life that may be present now or has been in the past.

Who knows what they will find?

2012 Planetarium Shows



August 24 8:00 P.M. Tales of the Maya Skies 9:00 P.M. Ultimate Universe	September 14 and 28 7:00 P.M. Tales of the Maya Skies 8:00 P.M. Ultimate Universe	October 12 and 26 7:00 P.M. Tales of the Maya Skies 8:00 P.M. Ultimate Universe
November 9 and 16 7:00 P.M. Tales of the Maya Skies 8:00 P.M. Ultimate Universe	December 7, 14, and 21 7:00 P.M. 'tis the Season 8:00 P.M. 'tis the Season	

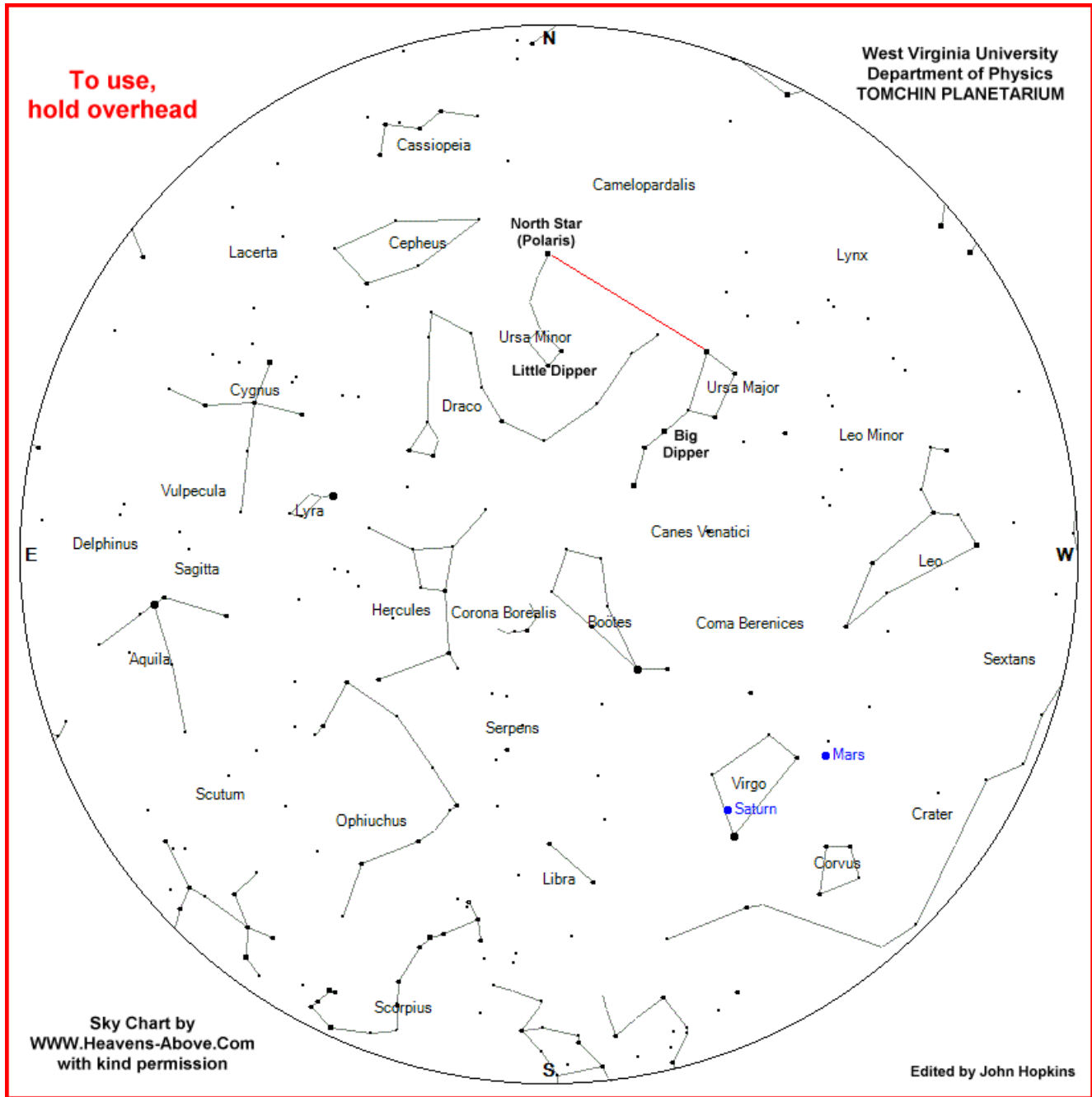
For those who are interested in bringing a group, such as schools or scouts, during the day, please call for more information. These shows are usually given on Tuesday or Thursday mornings.

For further information or reservations, please call John Hopkins at (304) 293-4961 or by email at: jghopkins@mail.wvu.edu

Selected Sunrise/Sunset and Moon Rise/Moon Set Times

Date	Sunrise	Sunset	Moon Rise	Moon Set	Moon Phase
Jul 3	5:57 A.M.	8:51 P.M.	8:45 P.M.	5:49 A.M.	Full Moon
Jul 10	6:01 A.M.	8:49 P.M.	12:06 A.M.	1:25 P.M.	Last Qtr
Jul 19	6:08 A.M.	8:44 P.M.	6:41 A.M.	8:50 P.M.	New Moon
Jul 26	6:14 A.M.	8:39 P.M.	2:24 P.M.	12:05 A.M.	First Qtr
Aug 1	6:19 A.M.	8:33 P.M.	8:02 P.M.	5:47 A.M.	Full Moon
Aug 9	6:26 A.M.	8:24 P.M.	NA	2:06 P.M.	Last Qtr
Aug 17	6:34 A.M.	8:14 P.M.	6:36 A.M.	7:56 P.M.	New Moon
Aug 24	6:41 A.M.	8:04 P.M.	2:31 P.M.	NA	First Qtr
Aug 31	6:47 A.M.	7:53 P.M.	7:38 P.M.	6:51 A.M.	Full Moon
Sep 8	6:54 A.M.	7:41 P.M.	NA	2:34 P.M.	Last Qtr
Sep 15	7:01 A.M.	7:29 P.M.	6:31 A.M.	6:58 P.M.	New Moon
Sep 22	7:07 A.M.	7:18 P.M.	2:24 P.M.	NA	First Qtr
Sep 29	7:14 A.M.	7:06 P.M.	6: 37 P.M.	6:45 A.M.	Full Moon

July 2012 Sky Chart* for:
 10:00 P.M at the beginning of the month
 9:00 P.M in the middle of the month
 8:00 P.M at the end of the month



*Sky Chart used with the kind permission of **Heavens-Above** at <http://www.heavens-above.com/>

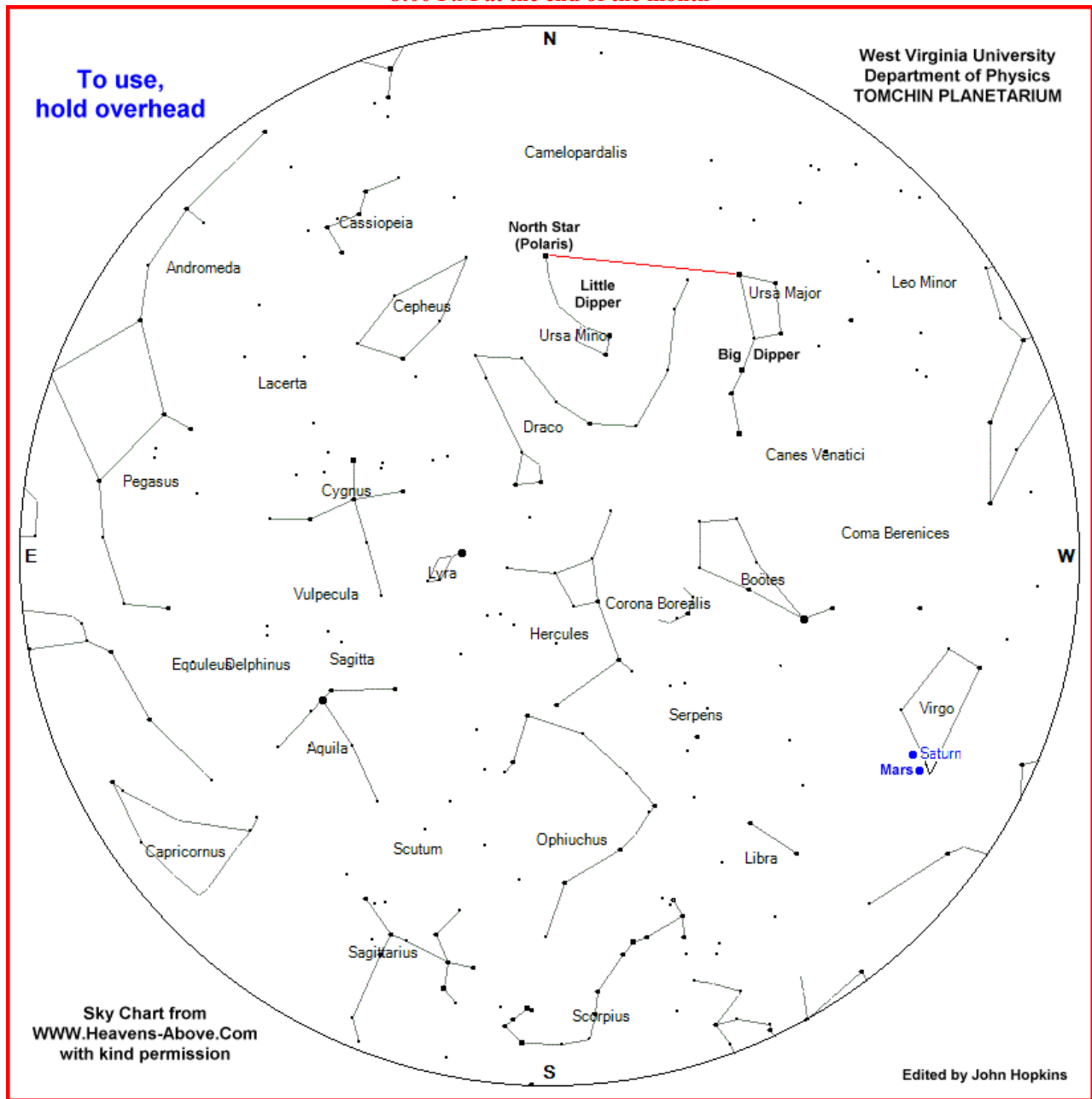
The TOMCHIN PLANETARIUM is named in honor of the late Harold Tomchin, of Princeton, W.Va., who made a generous donation to ensure its continuing operation, and whose family continues to support the planetarium for the educational benefit of WVU students, staff, and faculty members, as well as the local community. Contributions can be made in support of the planetarium through the **WVU Planetarium Project** at the **WVU Foundation, Inc.**, phone (304)284-4000. Thank You.



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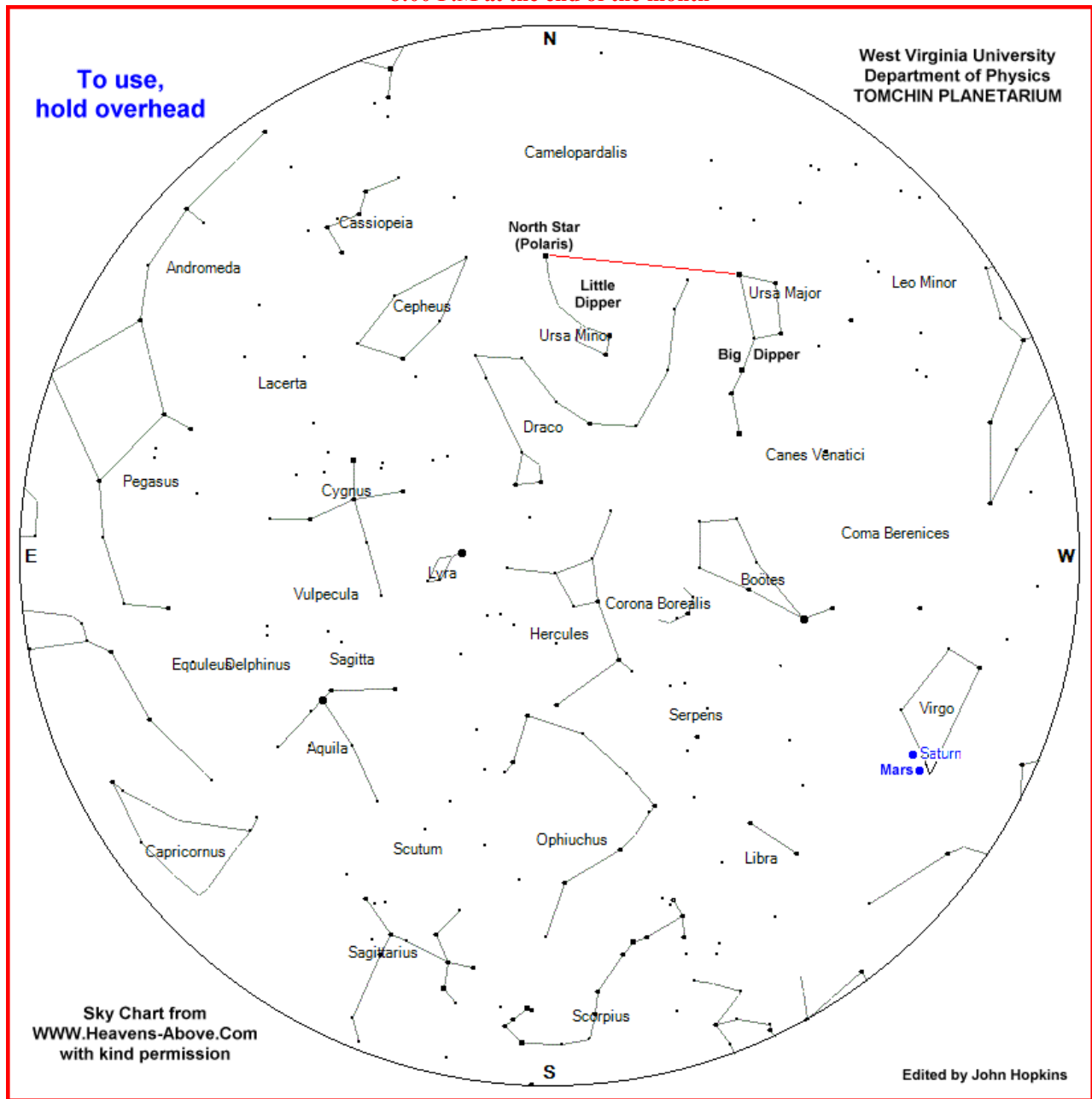
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